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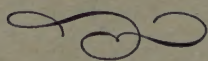
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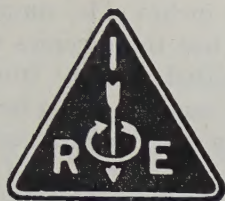
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The Institute functions solely to advance the theory and practice of radio and allied branches of engineering and of the related arts and sciences, their application to human needs, and the maintenance of a high professional standing among its members. Among the methods of accomplishing this is the publication of papers, discussions, and communications of interest to the membership.

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In 1939, the name of the PROCEEDINGS of the Institute of Radio Engineers was changed to the PROCEEDINGS of the I.R.E. and the size of the magazine was

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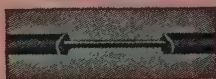
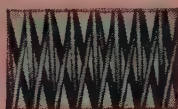
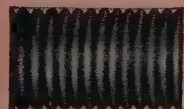
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DIRECT READING, LOGARITHMIC SCALE • NO ZERO SETTING

A unique balancing circuit automatically selects proper operating point for the oscillator and keeps distortion at a low level at all times. Thus no manual adjustment of operating point is necessary.

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Section Meetings

BALTIMORE

"Telephone Equipment for the Remote Control of Radio Apparatus," by C. J. Dorr, Engineer, Automatic Electric Sales Company, May 15.

CINCINNATI

"Patents in the War Program and Future Possibilities," by Alden D. Redfield, Legal Department, Crosley Corporation, June 23.

CLEVELAND

"Radio Reminiscences," by Ralph M. Heintz, Jack and Heintz, Inc., May 28.
"K Carrier Systems," by Charles E. Dutton, American Telephone and Telegraph Company, June 18.

DETROIT

"The Application of Inductive Tuning to Ultra High Frequencies" by B. V. K. French, Engineer, P. R. Mallory Company, May 15.
"Air-Raid-Warning Systems," by Edwin C. Denstadt, Controller, Air Raid Control Center, Detroit, June 19.

ST. LOUIS

"Emergency Telephone Communication Equipment," by Newton B. Fowler, American Telephone and Telegraph Company, May 15.

Membership

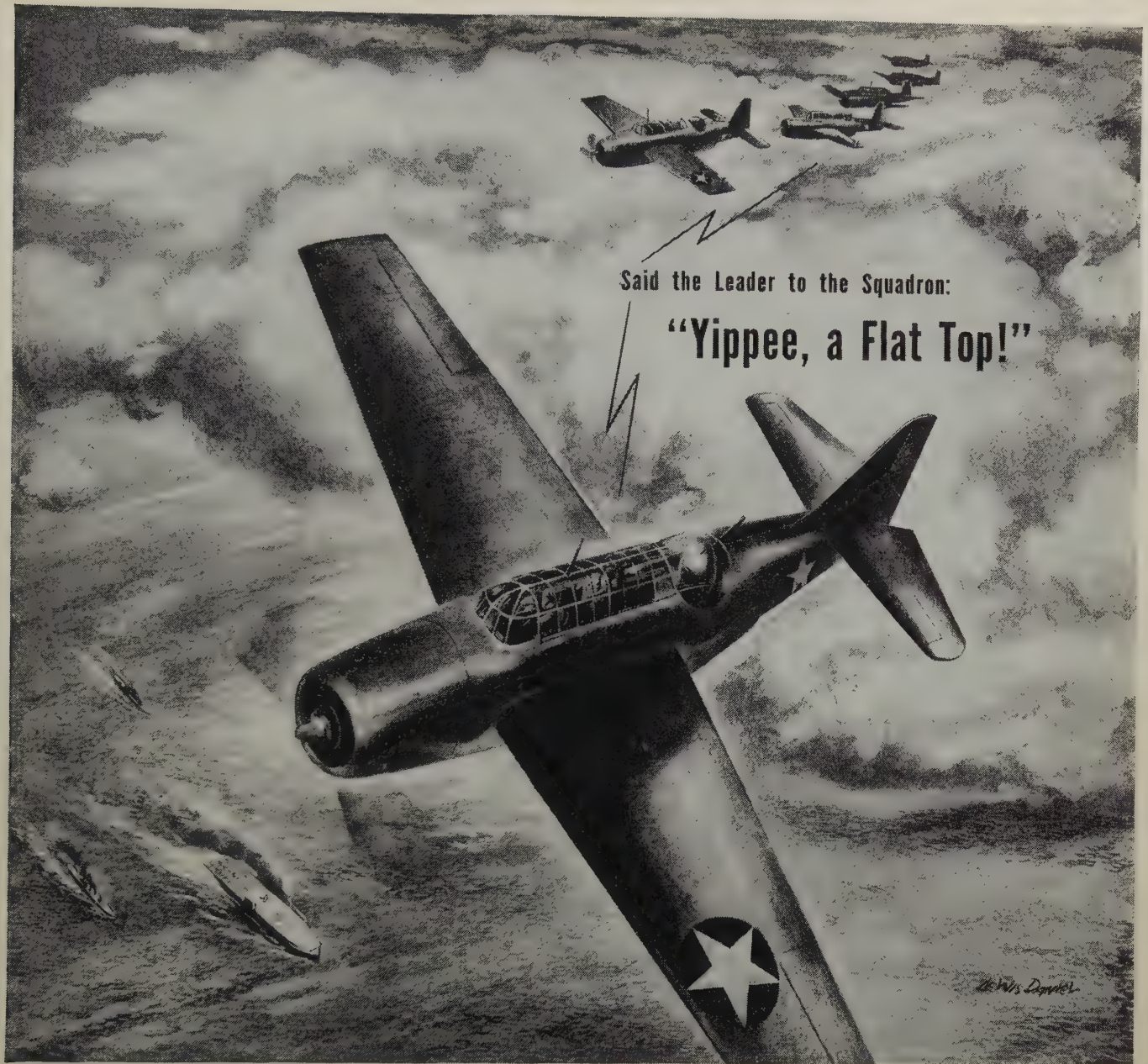
The following indicated admissions and transfers of memberships have been approved by the Admissions Committee. Objections to any of these should reach the Institute office by not later than October 31, 1942.

Transfer to Member

Atwood, John B., R.C.A. Communications, Riverhead, L. I., N. Y.
Becker, Stewart, 611 S. Gilpin St., Denver, Colo.
Johnson, J. F., 4316 Whitman Ave., Seattle, Wash.
Maser, Harold T., General Electric Co., Schenectady, N. Y.
McFarlane, Maynard D., Massachusetts Institute of Technology, Cambridge, Mass.
Piore, E. R., 325 Central Park West, New York, N. Y.
Wysotzky, Michael Z., 3355—16 St., N. W., Washington, D. C.

Admission to Member

Bramhall, F. B., Western Union Telegraph Co., 60 Hudson St., New York, N. Y.
Carpenter, D. D., 269 Somerset W., Ottawa, Ont., Canada
Dubinin, Alexei V., 1026—17 St., N. W., Washington, D. C.
(Continued on page xvi)



They work together better . . .
because they can talk together

In both the Coral Sea battle
And at Midway,
The Japs were robbed of a sneak attack
By scouting U. S. fliers,
Who reported back by radio.

Then Uncle Sam's carrier-based planes,
And land-based bombers
With perfect team work
Plastered the Jap task forces . . .
Giving special attention to
The enemy carriers.

And over the radiotelephones
Of our planes and ships
Came the phrase, "Scratch one flat top!"

The young American fliers
Were telling the world
Another Jap carrier
Had gone to the bottom!

Modern communications equipment
Designed and manufactured
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Is helping Uncle Sam
Coordinate his fighting forces
On land, sea and in the air.

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Is proving its value in time of war.

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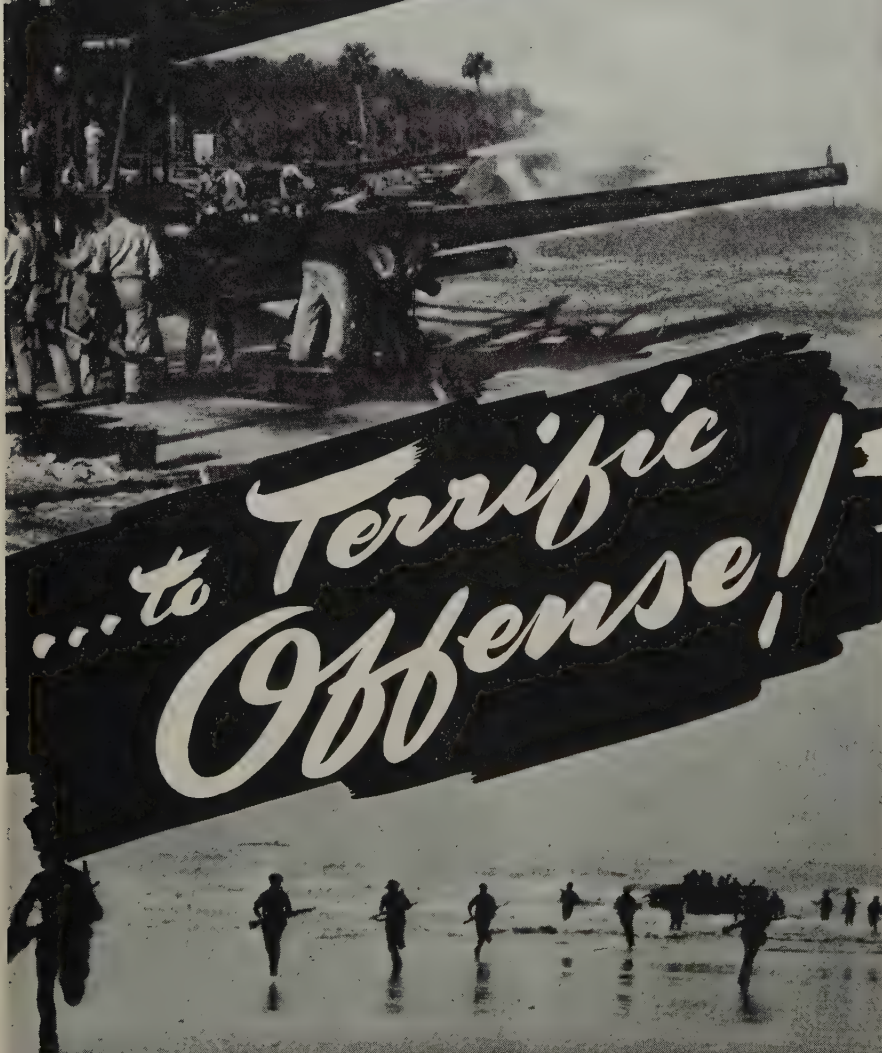
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(Continued from page xiv)

- Marathe, D. H., Radio Electric, Ltd.,
Laminton Chambers, Bombay,
No. 4, India
McArthur, E. D., General Electric Co.,
Schenectady, N. Y.
Neiman, M. S., 1026-17 St., N. W.,
Washington, D. C.
Scully, C. T., 59 Sevenoako Way, St.
Pauls Cray, Kent, England
Simons, A. H., 54 Western Elms Ave.,
Reading, Berks., England
van Dissel, G. F., 30 Fifth Ave., New
York, N. Y.
Wallis, Clifford M., University of Mis-
souri, Columbia, Mo.

Admission to Associate

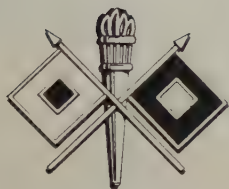
The following indicated admissions (or transfers where indicated as such) to Associate grade were approved on September 1, 1942.

- Albee, Charles, Lecombe Plaza, 58 and
Hoffman Ave., Philadelphia, Pa.
Anzjon, Arne E., KPFA, Helena, Mont.
Austin, Frank M., 3103 Amherst St.,
Houston, Texas
Aviles-Brunet Jesus M., Box 1331,
Mayaguez, P. R.
Barber, William H., 201 Barnsdale, Gar-
denville, N. Y.
Bond, Conrad F. 7804 Linden Rd.
Wyndmoor, Pa.
Borgstrom, Howard P. M., Elcock Ave.,
Boonton, N. J.
Bosman, Elmer H., 140-10 Franklin Ave.,
Flushing, N. Y.
Brown, Harold A., Box 238, State College,
N. M.
Butz, A. Nelson, Jr., 7 Irving Ter., Cam-
bridge, Mass.
Carrillo, Efren A., 1301 D. Guerra St., C.
Juarez, Chih., Mexico
Cotty, William F., 36 Innes St., Kimberly,
South Africa
Cranger, Peter, 7285 Sunset Blvd., Holly-
wood, Calif.
Curry, William F., 418 E. Bennett St.,
Springfield, Mo.
Dahl, A. Donald, 215 N. Tenth St.,
Brainerd, Minn.
Davids, Hugh H., 834 Hampton Ave.,
Schenectady, N. Y.
Den Breems, A., 10 Rockefeller Plaza,
New York, N. Y.
Dervishian, Edward, 1440 N. Dearborn
St., Chicago, Ill.
Dougherty, Raleigh G., 786 Broad St.,
Newark, N. J.
Easton, Allan, 32-15-35 St., Astoria,
L. I., N. Y.
Engh, Dick F., 5001 N. Tenth St., Ta-
coma, Wash.
Ewing, Edward G., Admiralty Signal
Establishment, G. P. O., London,
England
Feyerherm, Marvin P., RCA Manufac-
turing Co., Harrison, N. J.
Fisher, Weston C., No. 3 Wireless School,
RCAF, Winnipeg, Manit., Canada
Fitzhugh, J. V., 1203 Breeden Ave., San
Antonio, Texas
Flockencier, Walter E., 508 N. Columbus
St., Crestline, Ohio

(Continued on page xviii)



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are devoted to one essential task—"Get the message through!"

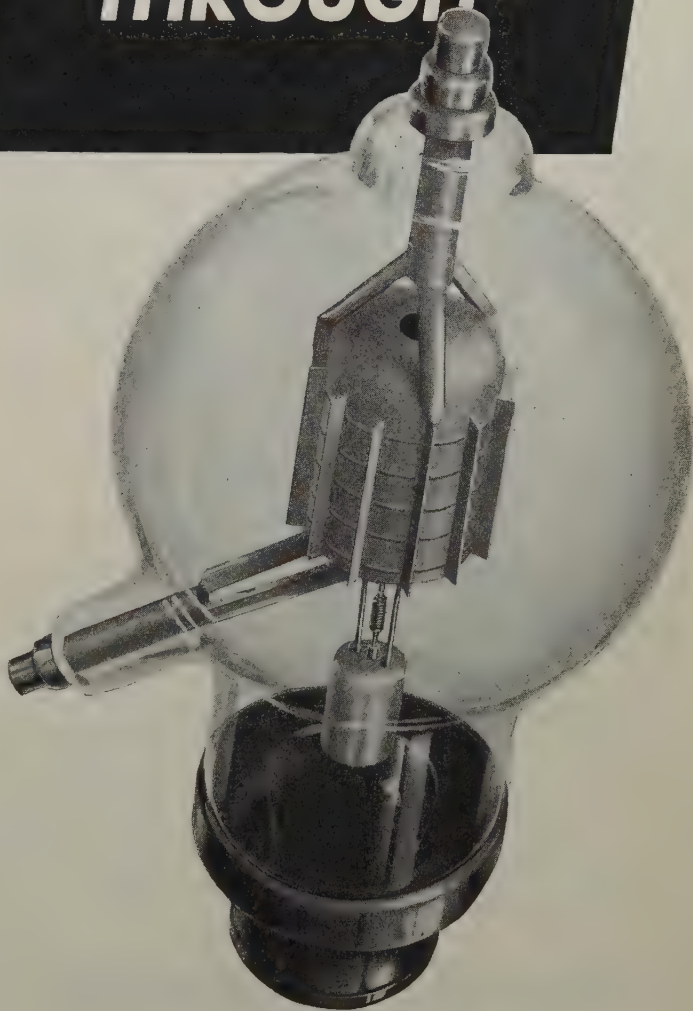
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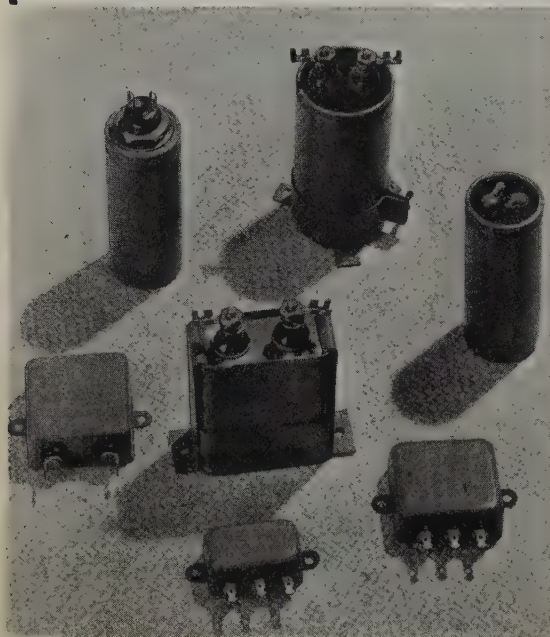
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- Godsey, Marvin S., Box 232, Culpeper, Va.
- Goldstein, Joseph E., 110 Belshaw Ave., Eatontown, N. J.
- Greenough, Leighton, RCA Laboratories, Princeton, N. J.
- Hagen, Harold M., 407 W. South St., Angola, Ind.
- Harmon, William R., WMVA, Martinsville, Va.
- Holbrook, R. A., 146 Lawrenceville Rd., Decatur, Ga.
- Holmes, Leonard O., 9581 Hillhaven Ave., Tujunga, Calif.
- Holt, Albert C., 385 Elm St., Oradell, N. J.
- Hoover, Merle V., 302 W. Alexandria Ave., Alexandria, Va.
- Houser, John A., 206 Park St., West Springfield, Mass.
- Javna, Stephen L., 590 Fort Washington Ave., New York, N. Y.
- Julian, Charles N., 4914 Holder Ave., Baltimore, Md.
- Kennedy, William A., 517 Seventh St., Bremerton, Wash.
- Kerr, George O., 30 Pansy Ave., Ottawa, Ont., Canada
- Klahn, Richard H., Radio Laboratories, P.S.N.Y., Bremerton, Wash.
- Krieger, Isadore, 2201 W. 15 Ave., Gary, Ind.
- Lebenbaum, Matthew T., Radio Research Laboratories, Harvard University, Cambridge, Mass.
- Lee, Parkman, c/o G. & H. Taylor, 47 Mott Street, New York, N. Y.
- Levine, Samuel, 2406 Ballentine Blvd., Norfolk, Va.
- Liebson, Sidney H., 2005 O St., N. W., Washington, D. C.
- Lind, David A., 1910—15 N., Seattle, Wash.
- Madsen, R. G., Box 211, Mountain View, Calif.
- McIlvaine, Douglas K., Box 292, Short Hills, N. J.
- McKee, Herbert W., Naval Research Laboratory, Anacostia, D. C.
- Meilander, Willard C., 412 W. Gilmore Ave., Angola, Ind.
- Miller, Edward A., Acme Electric and Manufacturing Co., Cuba, N. Y.
- Mumma, Harries A., Jr., 8 Hawthorne Rd., Bronxville, N. Y.
- Newcomb, George O., 142 Wilmington Pl., S. E., Washington, D. C.
- Palmes, Albert H., 5 Dutton Ave., Catonsville, Md.
- Pang, Daniel L., 3321 Martha St., Honolulu, T. H.
- Patterson, Thomas C., 22 Dryburn Rd., Durham Moor, Nr. Durham, England
- Place, Roger, 212 Murray St., Ann Arbor, Mich.
- Polster, Norman E., Leeds and Northrup Co., 4901 Stenton Ave., Philadelphia, Pa. (transfer)
- Price, William J., 64 Ettrick Ter., Rutherford, N. J.

(Continued on page xxii)

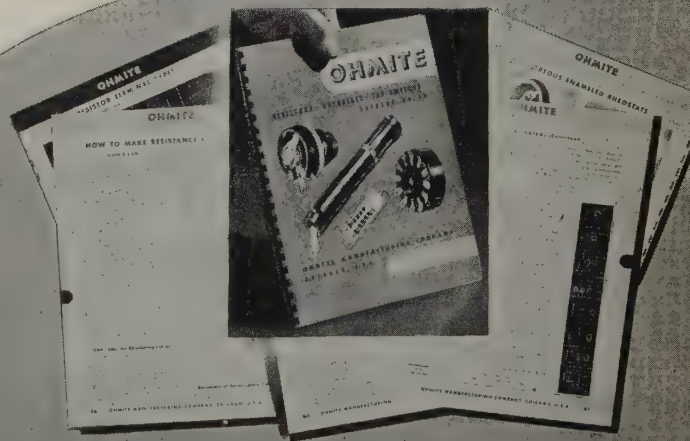
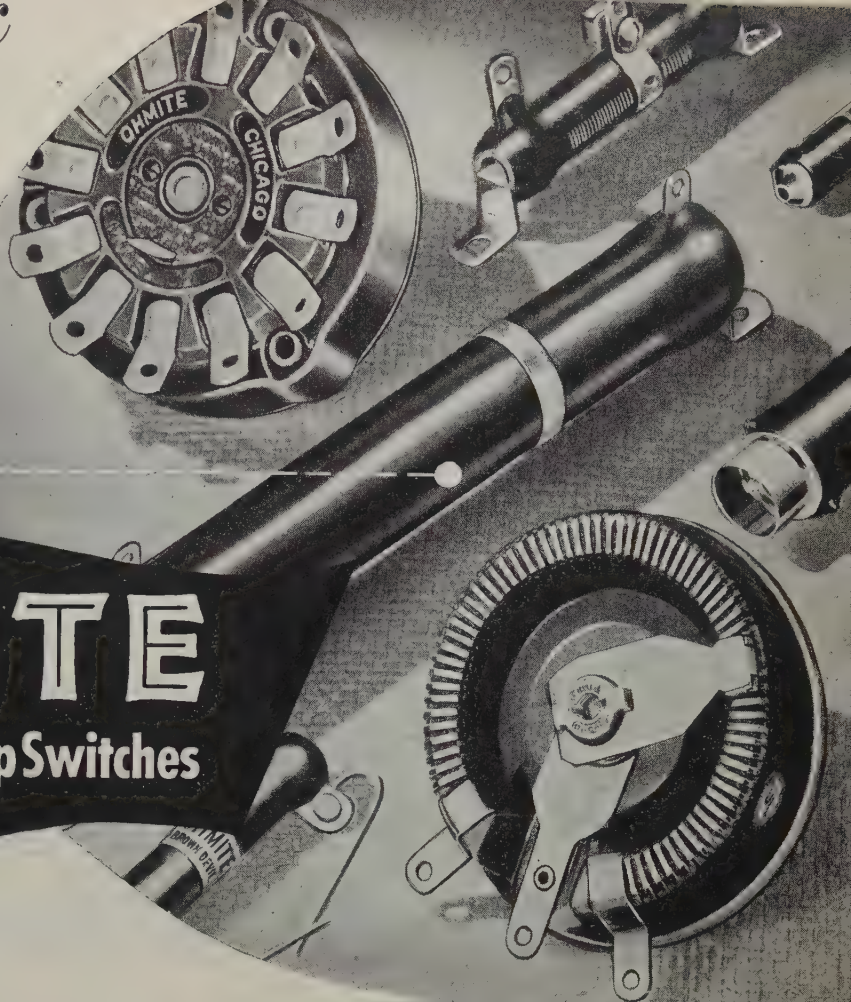
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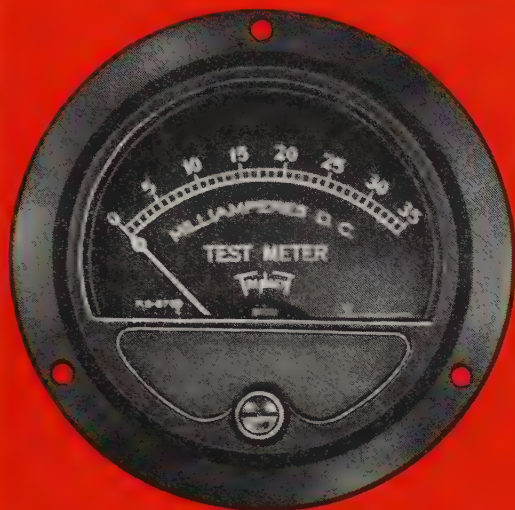
- Reade, Ralph B., R 3 Laboratory, International Telephone and Radio Laboratories, 67 Broad St., New York, N. Y.
- Riegger, W. Joseph, 1136 Neal St., N. E., Washington, D. C.
- Roberts, Charles E., 4235¹ Huntley Aqe., Culver City, Calif.
- Rodenburg, John R., Midland Radio and Television Schools, Inc., Athens, Ga.
- Sastry, N. S., T. S. Adyar, Madras, India
- Saylor, William R., 119 Holden Green, Cambridge, Mass.
- Schmitz, Maurice W., 536 N. Hayworth Ave., Los Angeles, Calif.
- Shanck, Roy B., 134 Manor Rd., Douglaston, L. I., N. Y.
- Sholand, Steve O., 1422 Foster Ave., Chicago, Ill.
- Shreve, Leonard, 3217 N. E. Everett St., Portland, Ore.
- Shufer, Max, 939 Longfellow St., N. W., Washington, D. C.
- Singleton, Julius K., Seville Apt. Hotel, Sioux Falls, S. D.
- Smith, F. A. B., 4215 Alton Place, N. W., Washington, D. C.
- Stelzenmuller, G. V., Jr., Box 142, Grand Island, Neb.
- Stephens, Helen, 179 Maple Ave., Red Bank, N. J.
- Steppler, Robert V., 1122 Catalina Blvd., San Diego, Calif.
- Tague, William T., 42 Ferguson Place, Box 174, Ramsey, N. J.
- Taschner, Vern M., 6347 Ivarene Ave., Hollywood, Calif.
- Thaler, Samuel, 4933 Pulaski St., Philadelphia, Pa.
- Thompson, James F., 2423 S. 27 St., Arlington, Va.
- Thorson, Harry L., General Electric Co., Schenectady, N. Y.
- Tirrell, Clyde W., 3128 Newton Ave., San Diego, Calif.
- Travis, Edward F., 147 Sacandaga Rd., Scotia, N. Y.
- Voelpel, John, 248 E. Jamaica Ave., Valley Stream, N. Y.
- Webb, Haywood E., Jr., Box 468, Tuskegee Institute, Ala.
- Weiss, Milton L., 60 Lithgow St., Dorchester, Mass.
- Wesenberg, Corbit M., 120 N. Forest Ave., Rockville Center, L. I., N. Y.
- Whittier, Carl H., 31 Summer St., Nahant, Mass.
- Williams, Arthur D., 2725 Inglewood Ave., Baltimore, Md.
- Williams, John R., 4042 First St., N. W., Washington, D. C.
- Witt, Marcus K., Jr., 106 Cedar St., Hempstead, L. I., N. Y.
- Wright, David I., 257 Nassau St., Princeton, N. J. (transfer)
- Yelsky, Benjamin, 1004 Eastern Pkwy., Brooklyn, N. Y.
- Young, Earl S., 2908 Beaumont Rd., Louisville, Ky.
- Zimet, Burt L., 2540 E. 24 St., Brooklyn, N. Y.

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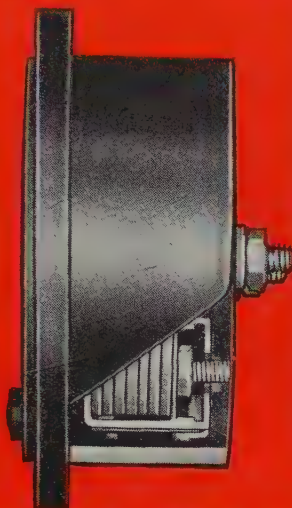
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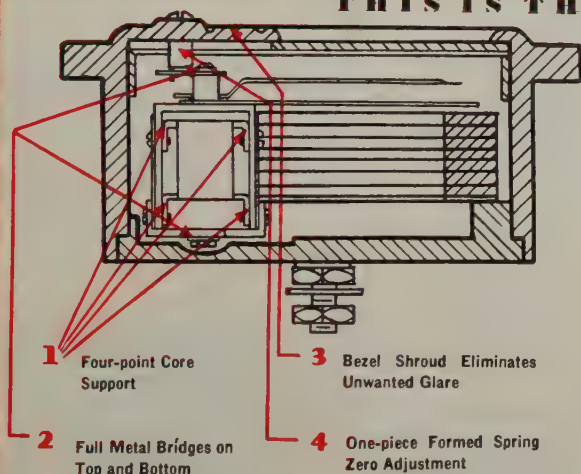


Full size of instrument. Note deep shroud for glass protection—and "Quick-Look" scale.

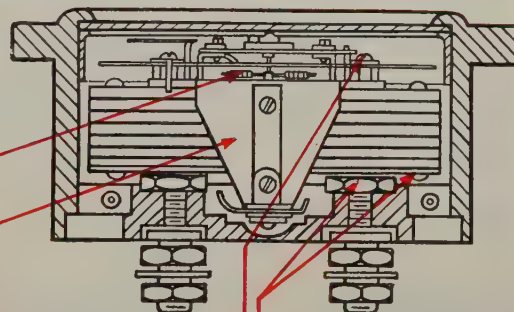


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BOX 135—P. STATION A, PALO ALTO, CALIFORNIA

Section Meetings

ATLANTA

"Radiations from Directional Antennas," by J. H. DeWitt, Jr., Chief Engineer, WSM, April 17.

"The Western Union Telefax System," by L. H. Williams, Western Union Telegraph Company, June 19.

"Wartime Maintenance and Operation of Broadcast Stations," Roundtable Discussions, September 25.

CHICAGO

"Elements of Ultra-High-Frequency Design," by Robert E. Beam and A. B. Bronwell, Northwestern University, October 2.

CINCINNATI

"Improving WSAI in Downtown Cincinnati" by J. L. Hollis, Crosley Corporation, September 22.

CONNECTICUT VALLEY

"Modern Cathode-Ray Tubes" by L. B. Headrick, RCA Manufacturing Company, June 4.

DETROIT

"Wave Guides" by Stephen S. Atwood, University of Michigan, September 18.

"Klystron—Generator of Microwaves" by Lewis N. Holland, University of Michigan, September 18.

EMPORIUM

Sound Movies from General Electric Company and Lytton Engineering Company on Frequency Modulation, Oil-Filled Cables, and Glass Working, September 29.

INDIANAPOLIS

"Application of Cathode Followers," by Charles E. Rainwater, April 24.

LOS ANGELES

"Theory and Practical Operation of Wired Music as Provided by Muzak," by Richard Simonton, September 15.

Seminar of Current Radio Problems, directed by C. F. Wolcott, Gilfillan Brothers, Inc., September 15.

PHILADELPHIA

"A New Approach to the Problem of Phonograph Reproduction," by C. M. Sinnett, speaker, and G. L. Beers, co-author, RCA Manufacturing Company, October 1.

PORTLAND

"Electrical Indicating Instruments," by John Wright, Wright Meter Repairing Service, September 23.

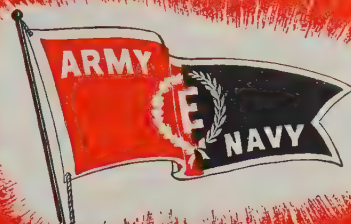
Review: "A Secondary Frequency Standard Using Regenerative Frequency Dividing Circuits" by F. R. Stansel, April, 1942, PROCEEDINGS, Francis McCann, Federal Communications, Commission, September 23.

SAN FRANCISCO

"Video Coupling Units," by Austin V. Eastman, University of Washington, September 16.

WASHINGTON

"Effect of Solar Activity on Radio Communication," by H. W. Wells, Carnegie Institution, September 14.



"WELL DONE"

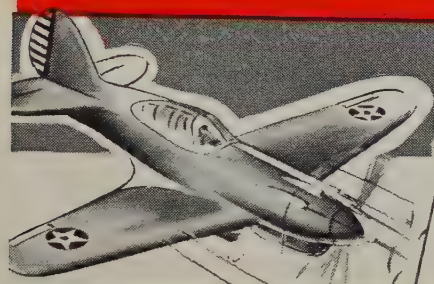
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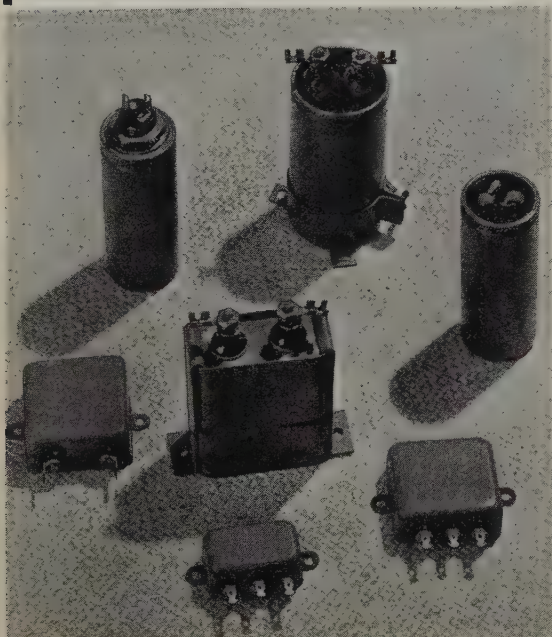
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Membership

The following indicated admissions and transfers of memberships have been approved by the Admissions Committee. Objections to any of these should reach the Institute office by not later than November 30, 1942.

Transfer to Member

Bailey, Arnold B., Bell Telephone Labs., Inc., 180 Varick St., New York, N. Y.

Griffiths, H. V., British Broadcasting Corp., Nr. Westerham, England
Stobbe, John A., 63 Wall St., New York, N. Y.

Admission to Member

Bayles, John C., 406 Lenox Pl., South Orange, N. J.

Fisher, S. T., Box 64, Station H, Montreal, P. Q., Canada

Hathaway, Donald L., Box 930, Casper, Wyoming

The following admissions to Associate membership were approved on October 2, 1942.

Admission to Associate

Ameen, Alfred, 2612 St. Paul St., Baltimore, Md.

Antunes, Manuel, 77 Ave. Luis Bivar, 4/D, Lisbon, Portugal

Austin, John F., 19 Court St., Dedham, Mass.

Bedwell, Thomas H., University of South Dakota, Vermillion, S. D.

Bell, William L., Bell Telephone Labs., Inc., 180 Varick St., New York, N.Y.

Berman, Harry, 309 E. Moshulu Pkwy., Bronx, N. Y.

Bernard, Joseph T., 9th Signal Service Co., A.P.O. #958, c/o Postmaster, San Francisco, Calif.

Bradley, John H., British Broadcasting Corp., Tatsfield, Nr. Westerham, Kent, England

Carter, Robert E., 214 D Cypress St., Alameda, Calif.

Caudle, L. L., Jr., 1925 N. Tryon St., Charlotte, N. C.

Cheadle, Herbert A., 50 Sunley Gdns., Perivale, Greenford, Middx., England

Cooke, Kenneth R., WGBI, Scranton, Pa.

Cooper, Donald H., NBC, Trans Lux Bldg., Washington, D. C.

Crooks, Wilbur S., Kings Highway, Route, Fredericksburg, Va.

Devereux, William E., Box 248, 51 Radnor Ave., Harmon, N. Y.

Donaldson, Charles A., Box 212, Dayton, Ohio

Dragoo, K. L., 106 Baden St., San Francisco, Calif.

Duerden, Francis, 112 Springfield Park Ave., Chelmsford, Essex, England

Ecklund, E. Eugene, 3311—22 St., N. E., Washington, D. C.

Edelstein, Sam E., Jr., Commander Task Force 24, c/o Postmaster, New York, N. Y.

(Continued on page xx)

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The ability of GAMMATRONS to radiate tremendous amounts of power without release of gas adds hundreds of hours to their efficient life.

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Virtually all of the gas is thus squeezed out of the tantalum; and after the vacuum is sealed, this remarkable metal acts as a powerful sponge which actually *absorbs* any gas later released.

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Class C, Unmodulated,
Low μ (14) type*

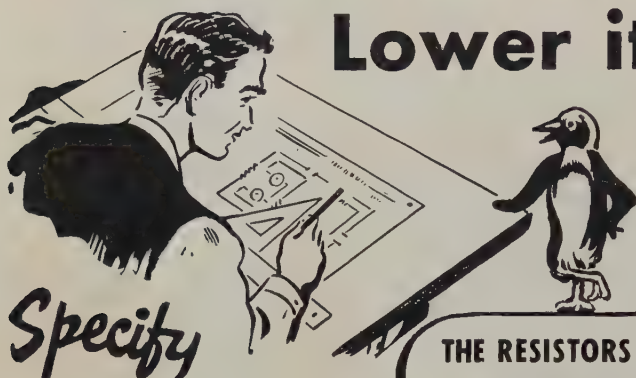
	Typical	Max.
Power Output . .	1800 Watts	—
Driving Power . .	40 Watts	—
DC Plate Voltage .	5000 Volts	6000
DC Plate Current .	450 M.A.	600
DC Grid Current . .	45 M.A.	80
DC Grid Voltage . .	-575 Volts	-1500
Peak RF Grid Volts	915 Volts	—
Plate Input . . .	2250 Volts	2250
Plate Dissipation .	450 Watts	450

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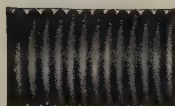
(Resistor Division)

North Adams, Mass.

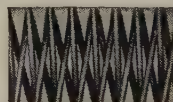
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Wound Resistor
Could Do.*

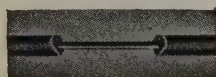
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- . . . Amazingly small size.
- Full-rated wattage dissipation regardless of resistance value.
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- Inductance reduced to negligible values.
- Doubly protected by an extra outer case of tough ceramic or shock-proof glass.



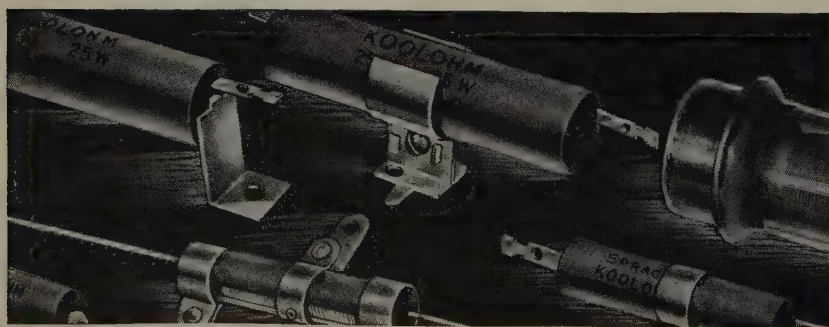
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Section of KOOLOHM wire with ceramic insulation removed to show contrast between bare and insulated wire. This flexible, heat-proof insulation is actually applied to wire at a temperature of 1000° C.!



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- Falbee, Harold W., 166-15 Jewel Ave., Flushing, N. Y.
- Farr, William, Route 1, Box 660, Edmonds Wash.
- Fernandez, Manuel, 4100 N.W. 11 Court, Miami, Fla.
- Fister, Theo. J., 1000 N. 10 St., Reading, Pa.
- Foil, William P., 1426—21 St., N. W., Washington, D. C.
- Foley, Gerard M., Battelle Memorial Institute, 505 King Ave., Columbus Ohio
- Gates, Stuart H., Southern Bell Tel. and Tel. Co., Louisville, Ky.
- Giddis, Albert N., 362 Adams St., Lowell, Mass.
- Goodyear, W. Frederic, 2693 St. Benedict St., Baltimore, Md.
- Graffam, Perry S., 5921 West Dickens Ave., Chicago, Ill.
- Grelck, Harry L., 528—81 St., Brooklyn, N. Y.
- Gruber, Benj. A., c/o R.A.F. Ferry Command, Gander, Newfoundland
- Hanes, Mortimer, 11366 Meyers Rd., Detroit, Mich.
- Hanson, August R., Aviation Radio School, (Ward Island), Corpus Christi, Texas
- Harriman, D. W., 5029—23 St., Detroit, Mich.
- Humphrey, Gordon S., 301 Windsor St., Silver Spring, Md.
- Isaac, Victor E., 2084 Claremont Ave., Apt. 16, Montreal, P.Q., Canada
- Justman, Simon 220 North Roberts Blvd., Dayton, Ohio
- Kirischjian, Harry H., 6738 Sixth Ave., Brooklyn, N. Y.
- Kline, Harold J., Route 1, Atwater, Ohio
- Kramer, Ambrose W., 3807 Castilla Ct., Corpus Christi, Texas
- Kubilius, Alphonse A., 3952 S. Rockwell St., Chicago, Ill.
- Lazowski, J. M., R.C.A.F. #1 Wireless School, Montreal, P.Q., Canada
- Lenihan, J. M. A., 37 Cochrane Park Ave., Newcastle on Tyne 7, England
- Locker, Melville, 300 W. 72 St., New York, N. Y.
- Lockyer, John S. 272 South Lane, New Malden, Surrey, England
- Lunan, W. Alan, 2312 Wilson Ave., Montreal, P.Q., Canada
- Maguo, Hector T., Mirasol 451, Buenos Aires, Argentina
- Mason, Samuel J., c/o Graham, 66 Huntington Ave., Boston, Mass.
- McCarty, Ignatius H., 1005 De Young Bldg., San Francisco, Calif.
- McCready, Sylvester W., 3101 G St., Vancouver, Wash.
- Mead, H. Bill, E. 1812 First Ave., Spokane, Wash.
- Miller, B. B., 2356a Laurence St., St. Louis, Mo.
- Miner, Leslie C., 380 La Salle Ave., Buffalo, N. Y.
- Murphree, Francis J., Jr., 808 Graymont Ave. West, Birmingham, Ala.
- Olmsted, Donald T., 3327 N. 49 Ave., Portland, Ore.
- Orrien, William, 14 Montith St., Brooklyn, N. Y.

(Continued on page xxii)



How to Get Longer Life from Your MERCURY-VAPOR TUBES



Here's a four-word formula to make your mercury-vapor tubes last longer—"Handle carefully; operate conservatively." Below are a few suggestions to help you put this formula into effect. They will help prevent many of the causes of tube failure, such as: loss of emission, high arc-drop, cathode bombardment, arc-backs, the liberation of gas, and cathode failure. These safeguards are applicable to such tubes as the following General Electric mercury-vapor rectifiers: GL-266B, GL-857B, GL-866A/866, GL-869B, GL-872, GL-872A. For more complete instructions on operation and handling, write for Bulletin GEH-977B. Also list the types of G-E mercury-vapor rectifiers you are now using. We shall be glad to send you complete service information designed to help you get the most out of your mercury-vapor tubes. *General Electric Company, Schenectady, N. Y.*

1 Keep tubes upright and avoid splashing mercury around. When tubes are first placed in operation, be sure to apply cathode voltage *alone* until mercury is properly distributed.

2 Keep condensed mercury temperature within limits recommended by tube manufacturer.

3 Be sure cathode base, not the anode end, is coolest part of tube. Don't let drafts blow on tubes. Never allow the mercury to condense at the anode end.

4 If you use forced air against the bottom of the tube, keep the blower on for a few minutes after shutting filaments down.

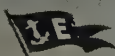
5 Allow plenty of filament warm-up time before applying anode voltage.

6 Keep peak inverse anode voltage and peak current as low as possible for satisfactory operation. Use adequate protective devices for overload and arc-back protection.

7 Do not allow the cathode voltage (measured at the pins) to deviate more than five per cent from the rated value.

8 Don't overload tubes, even for short periods. Maintain full cathode voltage during standby operation when tube is operated without load.

9 Protect the tubes adequately against the effects of *r.f.*



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101
CARDIOID



U9-S



9D
HAN-D

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(Continued from page xx)

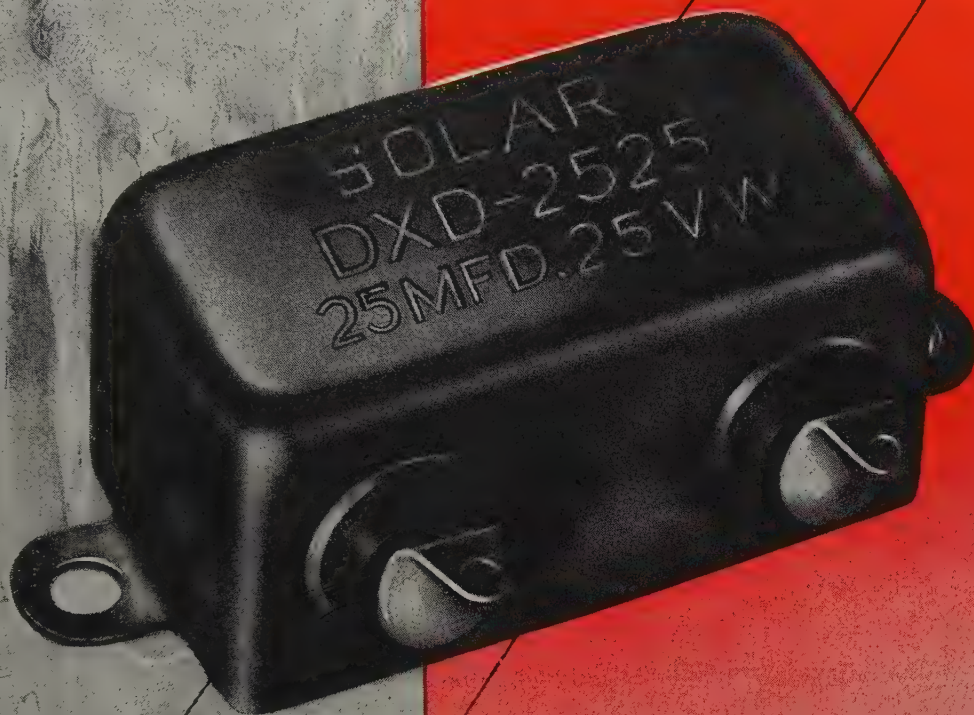
- Pearson, Carl A., Forest Heights, Box 22M, Route 2, Anacostia, D. C.
 Pitigliani, Luis A., 25 de Mayo 489, Buenos Aires, Argentina
 Proskauer, Richard, 325 E. 57 St., New York, N. Y.
 Quodomine, Richard A., 83 Floyd Ave., Bloomfield, N. J.
 Rojo, Alejandro, Transradio Internacional S.A., San Martin 379, Buenos Aires, Argentina
 Saunders, Clarence J., 3207 Morrison St., N.W., Washington, D. C.
 Scarlett, Alan Edward, 52 Camberwell Rd., Toronto, Ont., Canada
 Scheirer, Harry B., 1311 W. Loudon St., Philadelphia, Pa.
 Sheppard, Glenn E., 130 Floyd Ave., Bloomfield, N. J.
 Sherwood, William W., Sangamo Electric Co., Springfield, Ill.
 Shows, W. W., Route 2, Atlanta, Ga.
 Silver, Martin, 2806 Webb Ave., New York, N. Y.
 Skoller, Marvin, 565 W. Second St., Dayton, Ohio
 Smith, Douglas A., 21 Grosvenor Rd., Short Hills, N. J.
 Smith, Edward J., 33 Dwight St., Jersey City, N. J.
 Smithmeyer, Louis P., 17 Front St., Schenectady, N. Y.
 Sprinkle, Melvin C., 3742 Appleton St., N.W., Washington, D. C.
 Stello, Karl H., Beltsville, Md.
 Stevenson, Hugh 176 Benton St., Rochester, N. Y.
 Stoker, Frank E., Jr., 111 Lincoln Ave., Lexington, Ky.
 Swain, James R., 971 Cowper St., Palo Alto, Calif.
 Thomson, J. J., o/c Eastern Pool, A/S Installation Div., c/o Naval Officer in Charge, 224 Youville Square, Montreal, P.Q., Canada
 Tomalesky, Joseph, 724 Newark Ave., Jersey City, N. J.
 Townsend, Charles L., 26 Pondfield Road West, Bronxville, N. Y.
 Tremblay, C. E., F/o CAPO #4, R.C.A.F. Gander, R.C.A.F. Overseas
 Unsworth, R. G., 649 North State St., Tacoma, Wash.
 Wahlquist, Lyle O., 167 N. Sixth West St., Salt Lake City, Utah
 Ward, John W., 9906 Fort Hamilton Pkwy., Brooklyn, N. Y.
 Wentink, Tunis, Jr., R. D. 4, Box 540, New Brunswick, N. J.
 Yust, Harry J., 1909 N. Lawrence St., Philadelphia, Pa.

CURRENT LITERATURE

New books of interest to engineers in radio and allied fields—from the publishers' announcements. A copy of each book marked with an asterisk (*) has been submitted to the Editors for possible review in a future issue of the Proceedings of the I.R.E.

*THE FUTURE OF TELEVISION. By Orrin E. Dunlap, Jr., Manager of the Department of Information of RCA...

(Continued on page xxiv)

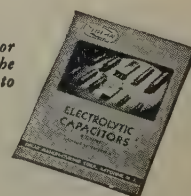


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Atwood, J. B., R.C.A. Communications, Riverhead, L. I., N. Y.
Becker, S., 611 S. Gilpin St., Denver, Colo.
Johnson, J. F., 4316 Whitman Ave., Seattle, Wash.
Maser, H. T., General Electric Co., Schenectady, N. Y.
McFarlane, M. D., Massachusetts Institute of Technology, Cambridge, Mass.
Piore, E. R., 325 Central Park West, New York, N. Y.
Wesser, C. H., 3441—21 St., Wyandotte, Mich.

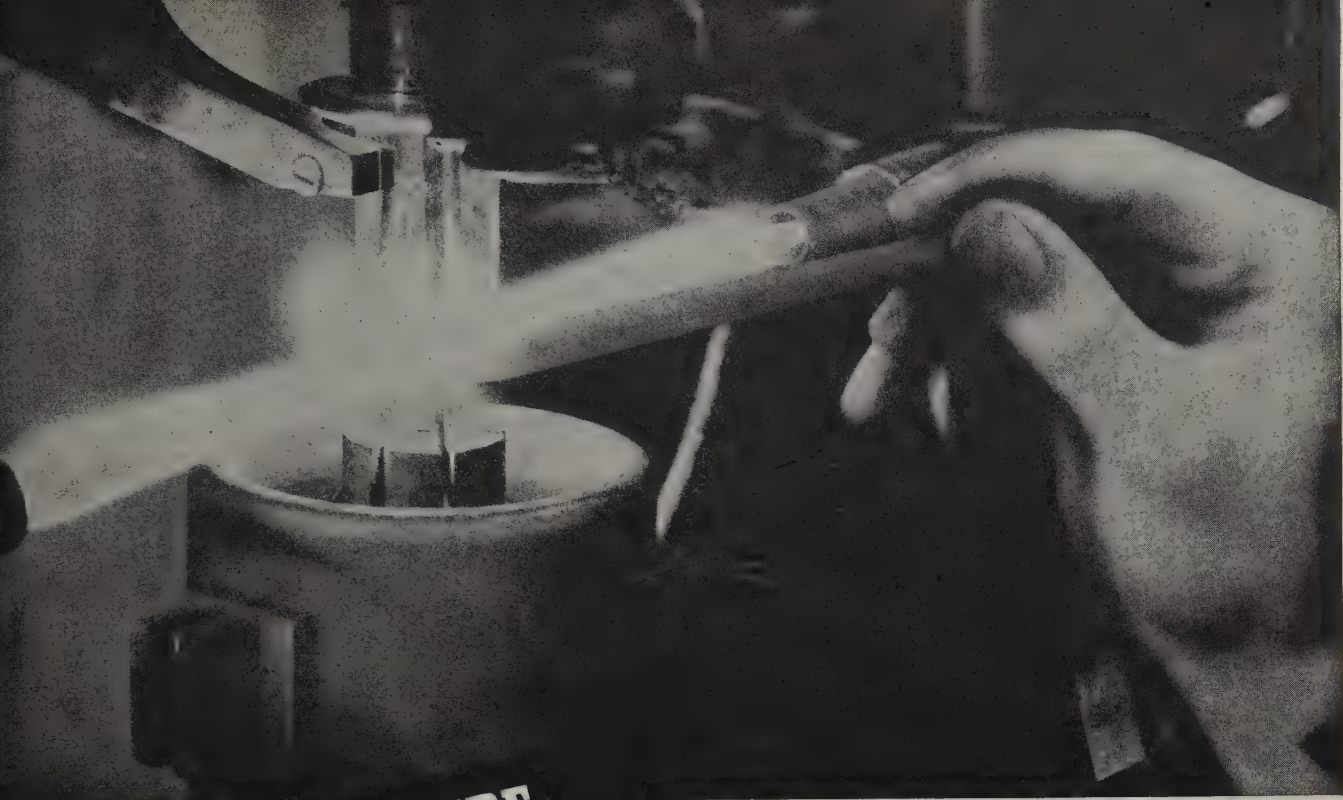
Admission to Member

Bramhall, F. B., Western Union Telegraph Co., 60 Hudson St., New York, N. Y.
Carpenter, D. D., 269 Somerset West, Ottawa, Ont., Canada
Dubinin, A. V., 1026—17 St., N.W., Washington, D. C.
Marathe, D. H., Radio Electric Ltd., Lamington Chambers, Bombay, No. 4, India
McArthur, E. D., Electronics Lab., General Electric Co., Schenectady, N. Y.
Neiman, M. S., 1026—17 St., N.W., Washington, D. C.
Scully, C. T., 59 Sevenoako Way, St. Pauls Cray, Kent, England
Simons, A. H., 54 Western Elms Ave., Reading, Berks, England
Van Dissel, G. F., 30 Fifth Ave., New York, N. Y.
Wallis, C. M., University of Missouri, Columbia, Mo.
Wysotzky, M. Z., 3355—16 St., N.W., Washington, D. C.

Admission to Associate

Altomare, R. E., Capitol Radio Engineering Institute, 3224—16 St., N.W., Washington, D. C.
Amsler, E. F., 861 University Ave., Palo Alto, Calif.
Arnold, H. H., Keota, Iowa
Betterton, A. R., 2021 Longwood St., Baltimore, Md.
Bleichner, C. W., 1320 Regent St., Schenectady, N. Y.
Bodle, D. W., 463 West St., New York, N. Y.
Brandt, R. H., Newman Springs Rd., Red Bank, N. J.
Breetz, L. D., Naval Research Laboratories, Anacostia Station, D. C.
Brodsky, S., 507 Crawford St., Toronto, Ont., Canada
Broughton, G. E., Sixth Signal Service Co., Fort Custer, Mich.
Cameron, E. G., 336—23 Ave., San Mateo, Calif.
Cantelon, E. A., 14833 Cloverdale Ave., Detroit, Mich.
Carroll, R. L., West Virginia University, Morgantown, W. Va.

(Continued on page xx)



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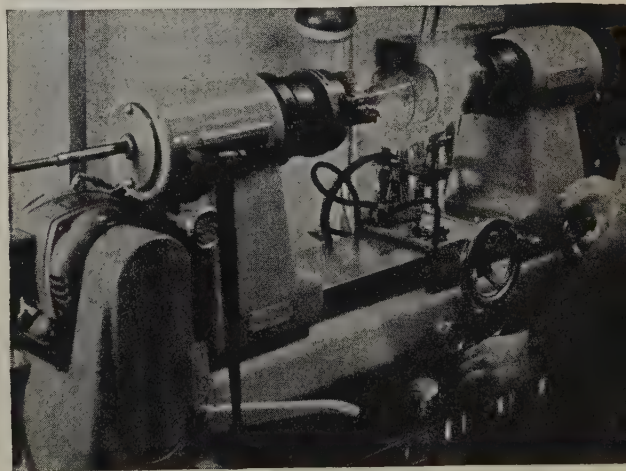
Follow the leaders to

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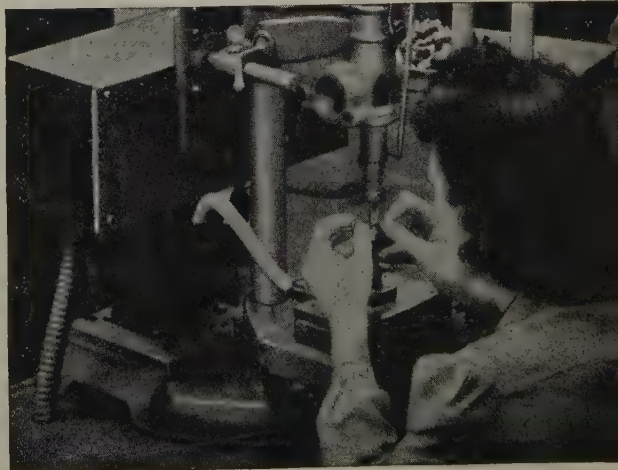
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Cooley, R. D., 2569 Fourth Ave., W., Seattle, Wash.

Corvi, J. A., Texas Agricultural and Mechanical, College Station, Tex.

Crotty, F. W., 300 Hayward Ave., Mt. Vernon, N. Y.

Cybick, J. J., 33 Madison Ave., New York, N. Y.

Dallavalle, F. J., 24 S. Ninth St., Newark, N. J.

Day, J. L., 905 W. Lee St., Wilson, N. C.

Delson, M. D., 410 Central Park West, New York, N. Y.

Denby, H. H., 18 Signal Service Co., Camp Campbell, Ky.

Derby, J. R., 1031 Harrison St., Denver, Colo.

Desnoyers, H. B., 18 Grant St., Binghamton, N. Y.

Dice, W. H., 3209 Shadyway Dr., Brentwood, Pa.

Donahue, W. J., Box 545, Dixon, Calif.

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Engman, G. E., Naval Training School, Fisher's Island, N. Y.

Evans, C. P., 134 Dracena Ave., Piedmont, Calif.

Franklin, E. F., 5 Heathfield Rd., Cross Road, P.O., Jamaica, B.W.I.

Geiger, L. H., 127—35 St., S.E., Washington, D. C.

Glinski, G., Northern Electric Co., 1261 Shearer St., Montreal, Que., Canada

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Hawley, P. F., 7339 S. Coles Ave., Chicago, Ill.

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Hildenbrand, K., 3534 Lawn Ave., St. Louis, Mo.

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Holmes, T. B., 8128 Wade Park Ave., Cleveland, Ohio

Hooper, J. F., Dominion Skyways Ltd., Malton Airport, Malton, Ont., Canada

Ivester, H. E., 8213 Dundalk Ave., Dundalk, Md.

Jackman, M. D., 1860 Broadway, c/o N. Y. School of Aircraft Instruction, New York, N. Y.

Jeffery, C. N., 12 Church St., Ashfield, N. S. W.

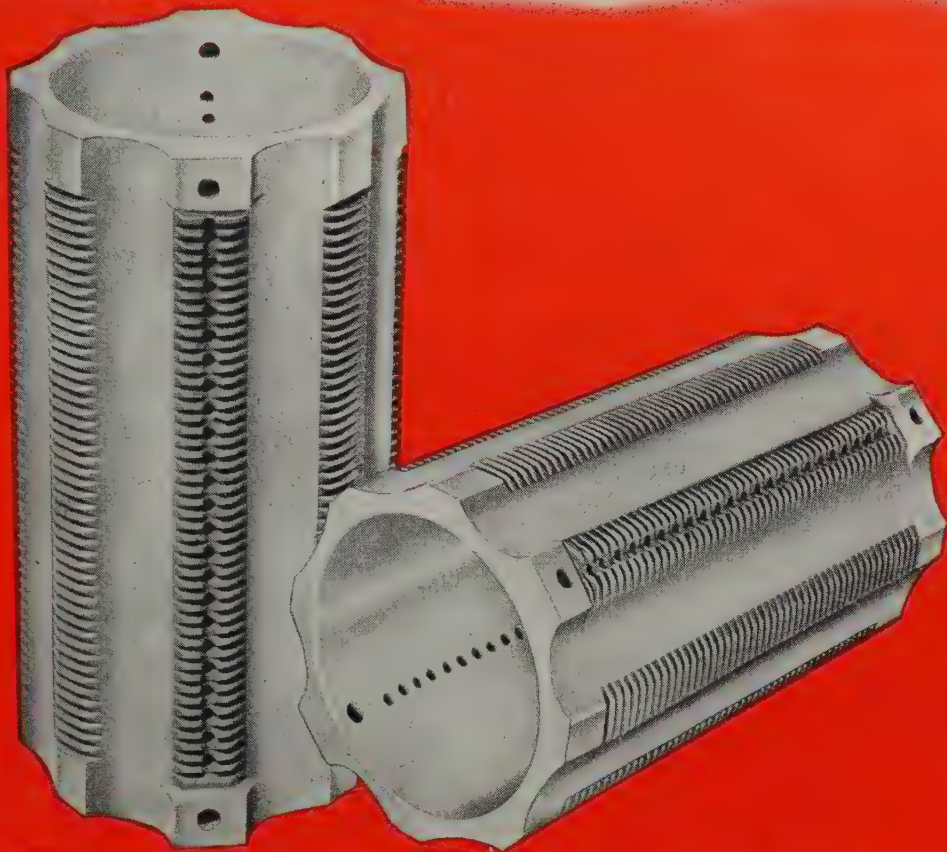
Jenkins, J. M., 4206 Berkeley Ave., Chicago, Ill.

Kantenberger, W. J., 740 S. Hampton Rd., Dallas, Tex.

Kercher, T. C., Atlantic Fleet Schools—Radio—Naval Operating Base, Norfolk, Va.

Knoop, W. A., Jr., 2 Main Ave., Passaic, N. J.

(Continued on page xxii)



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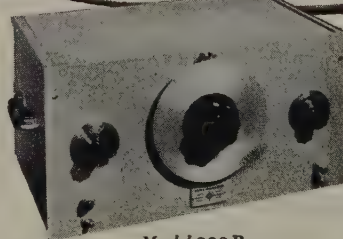
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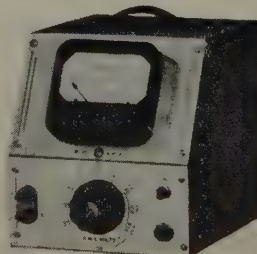
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Model 200 B
Resistance Tuned Audio Oscillator



Model 325 B
Noise and Distortion Analyzer



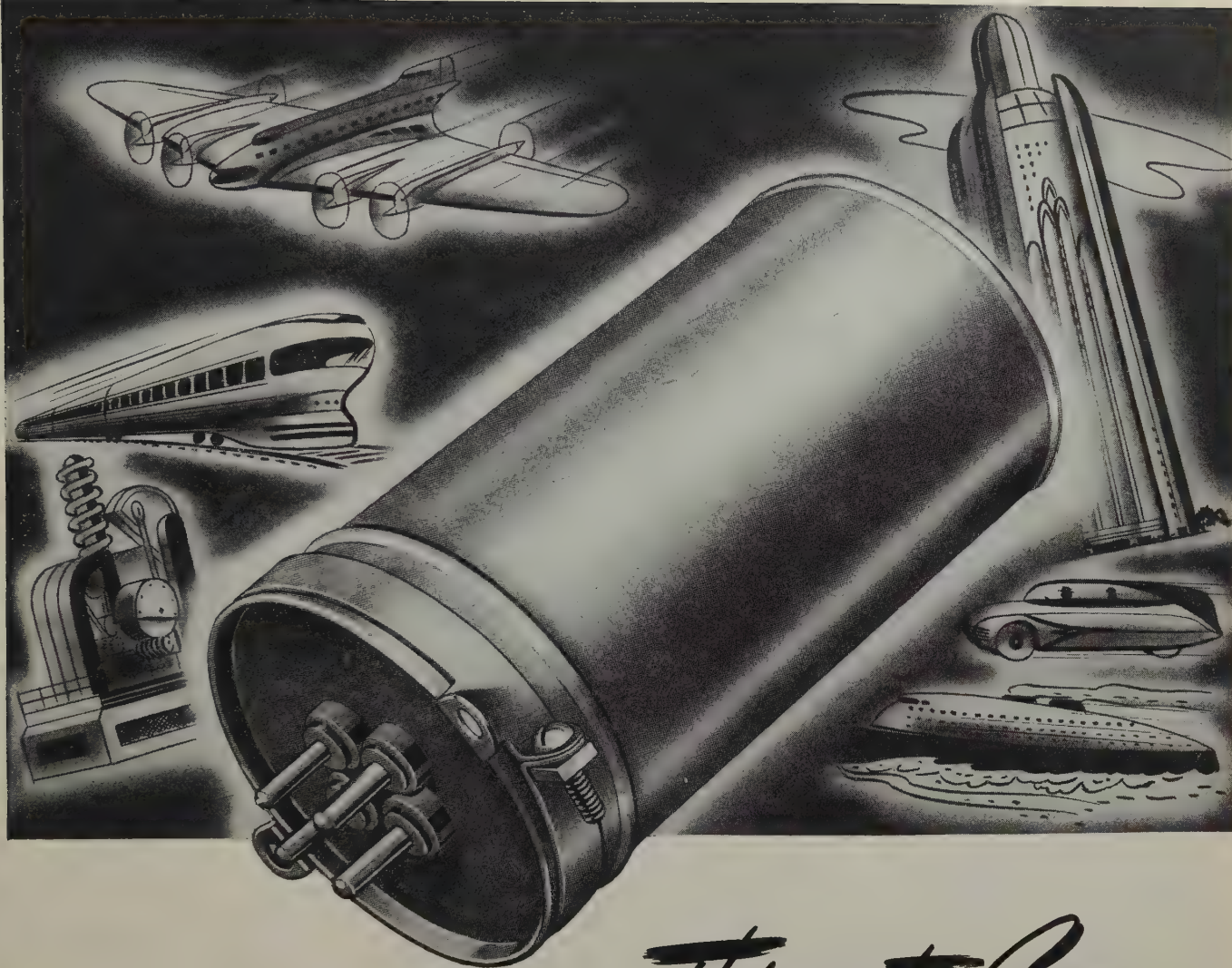
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- Luther, G. M., 2234 Laketon Rd., Wilkesburg, Pa.
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- Meigs, J. R., 2276 W. 23 St., Los Angeles, Calif.
- Merry, J. M. P., 5025 Tholozan Ave., St. Louis, Mo.
- Ming, M. M., Route 3, Mesquite, Tex.
- Muirhead, L. R., Mt. Royal and North Ave., Bendix Radio, Baltimore, Md.
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- Rose, S. P., "Corton," Chignal Road, Chelmsford, Essex, England
- Rosenberg, J. D., Capitol Radio Engineering Institute, 3224-16 St., N.W., Washington, D. C.
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(Continued on page xxiv)



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Stangel, W., 1309 Third St., West Depere, Wis.
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Zobel, E. R., Y.M.C.A., Grand Forks, N.D.

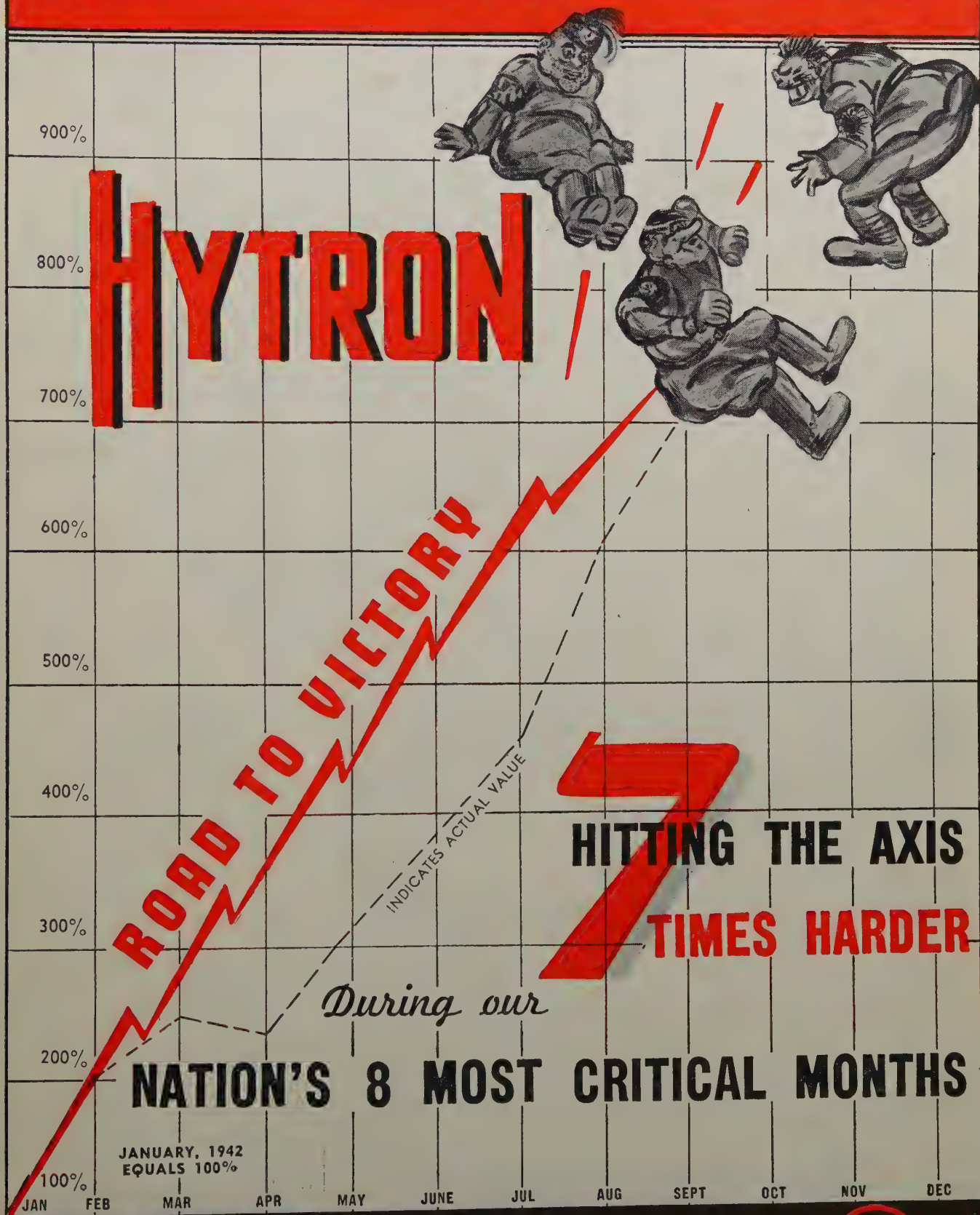
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Listed below are the names and last-known addresses of the members of the Institute whose correct addresses are unknown. It will be appreciated if anyone having information concerning the present addresses of the persons listed will communicate with the Secretary of the Institute.

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Bailey, W. B., Norfolk Navy Yard, Portsmouth, Va.
Baird, G. N., Airway Communication Station, Box 349, Rt. 1, Galveston, Tex.
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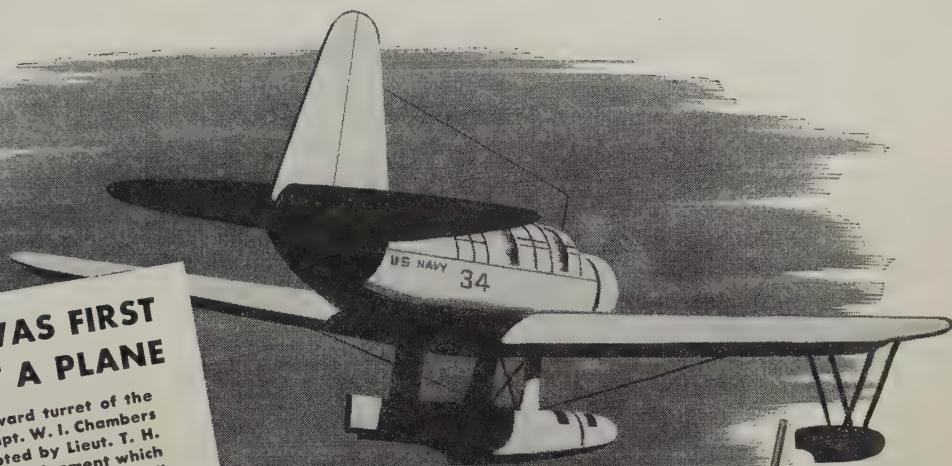
- Baker, A. L., 560 Tech. School Squadron, Scott Field, Ill.
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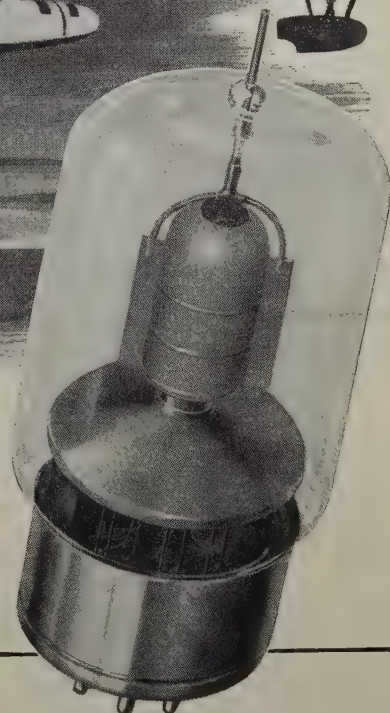
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- Doll, E. B., 2415 Good Hope Road, S. E., Washington, D. C.
- Doll, H.-G., 2720 Leeland Ave., Houston, Tex.
- Dorsa, S. C., 536 John Jay Hall, Columbia University, New York, N. Y.
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- Eames, A. M., Jr., Boothbay Harbor, Maine.
- Easton, Allan, 45-40—43 St., Long Island City, L. I., N. Y.
- Ehrlich, C. N., 304 W. 92 St., New York N. Y.
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- Fariss, G. W., WGPC, Albany, Ga.
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- Guest, J. W., 1336 Glenwood Rd., Glendale, Calif.
- Gunning, B., 1399 Kellon Ave., Los Angeles, Calif.
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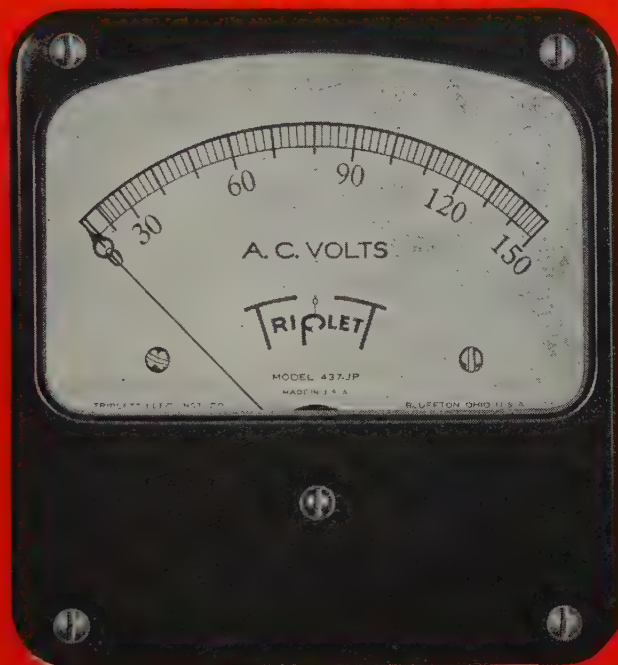
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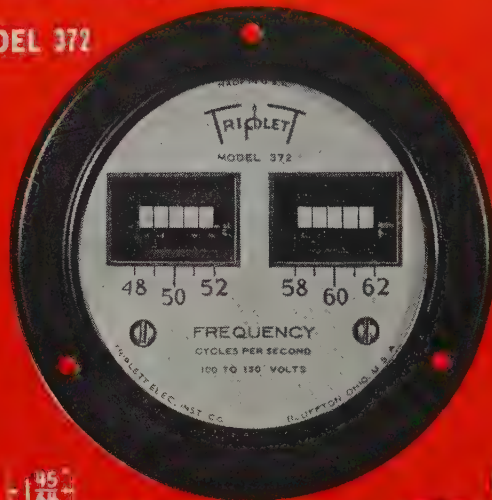
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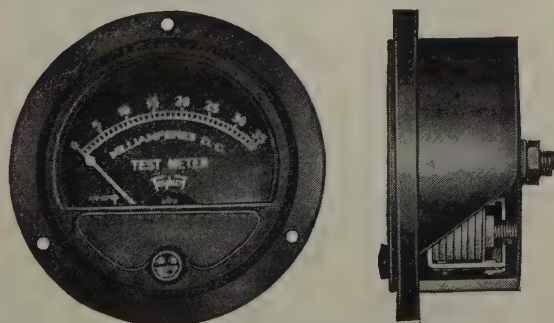
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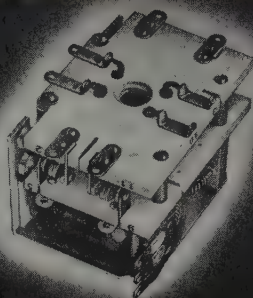
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- Radcliffe, J. C., Eagle River, Wis.
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(Continued on page xli)

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(Continued from page xxxii)

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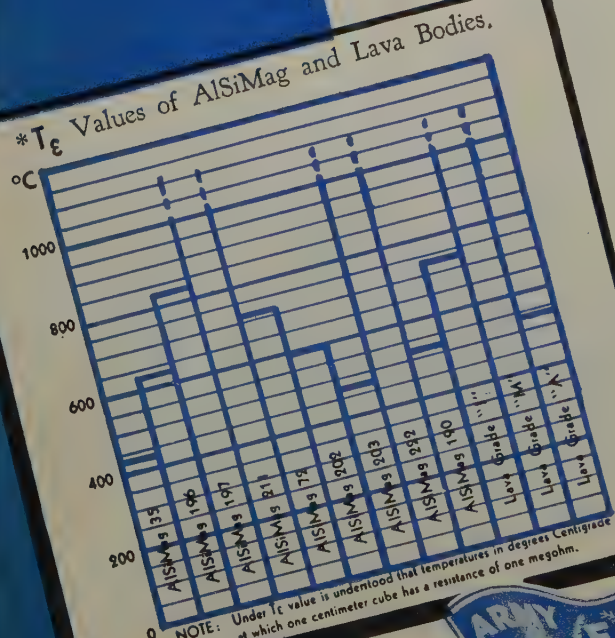
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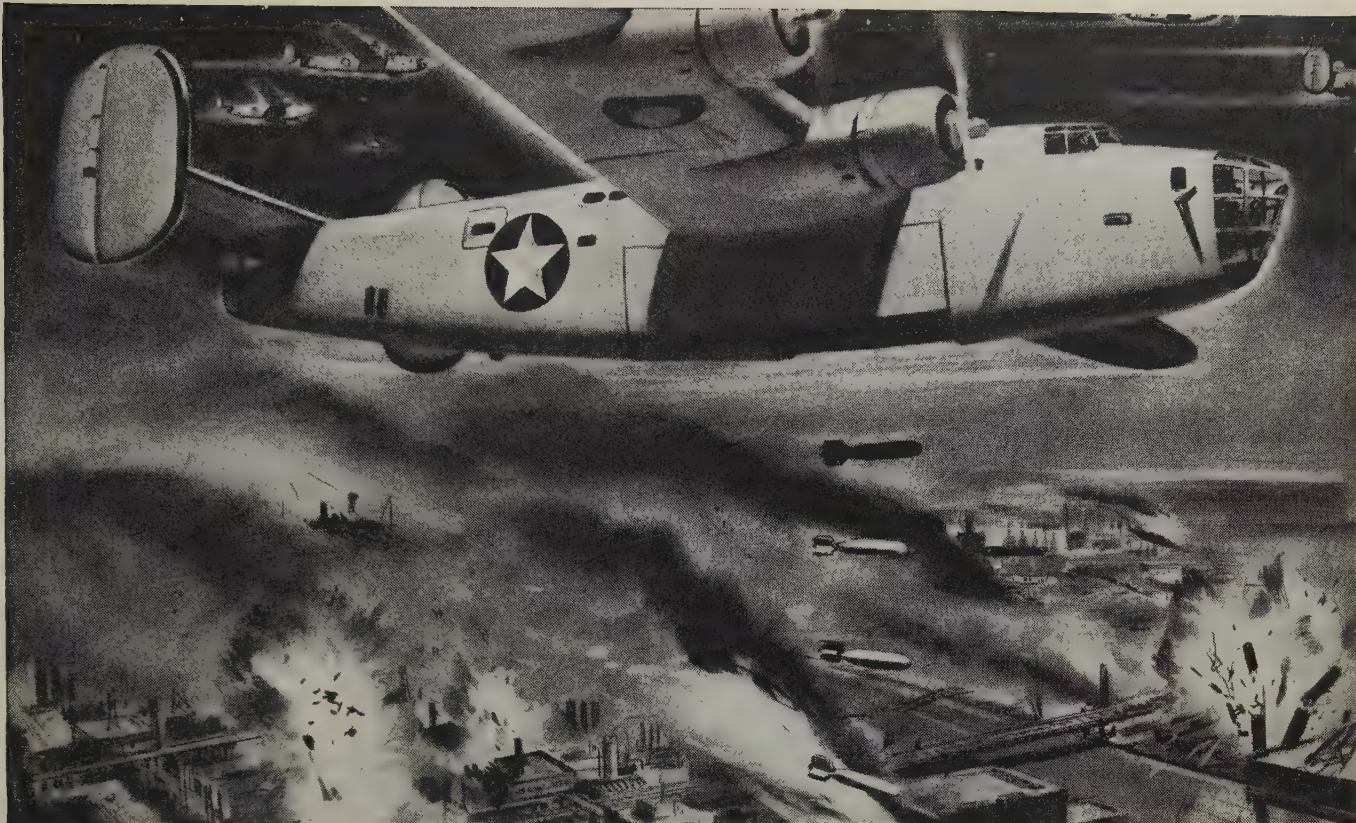
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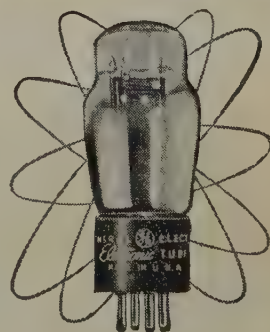
**FM Receivers
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The research organization went directly to private homes for its findings. It sought and obtained answers from both FM and non-FM owners of high, medium, and low cost sets. The answers took on a pattern of telling significance.

Seventy-eight per cent of the non-FM owners rated virtual freedom from static and better tone quality as the outstanding FM advantages. Eighty per cent of FM owners emphasized these same advantages also.

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Actually, almost all of the important rules for tire conservation find a close parallel in the job of making Transmitting Tubes last longer.

Just as tires should be rotated from wheel to wheel, from spare to active, so should tubes be interchanged. Tube spares should be used from time to time in order to guard against deterioration.

Just as proper, specified air pressure will add much to tire life, so does operating tubes in strict accordance with specified conditions and conservative ratings provide the best assurance against premature failure.

Just as slower driving and careful handling are important tire conservation measures, so

is it important to avoid unnecessary strains on tubes. As pointed out previously, as little as 5% reduction in filament voltage of pure-tungsten-filament types increases life 100%!

Another way of making an easier schedule for your tubes is to keep them cooler—by reducing plate voltage and dissipation, and by additional air cooling even beyond what may be specified. Still another way is by reducing filament voltage to 80%, whenever feasible, during standby periods.

Just as wheel alignment has an important bearing on tire life, so does the performance of related parts have much to do with tube life. For instance, properly designed smoothing filters are essential to obtaining optimum life from mercury-vapor rectifier tubes.

In short, these are the days when tube handling and operation are dictated by the necessity of obtaining every possible hour of tube life—just as is true of tires. Care in this direction—far above what you might consider giving in ordinary times—will pay worthwhile dividends.



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Centralab added a temperature compensating fixed condenser of ceramic material.

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1942

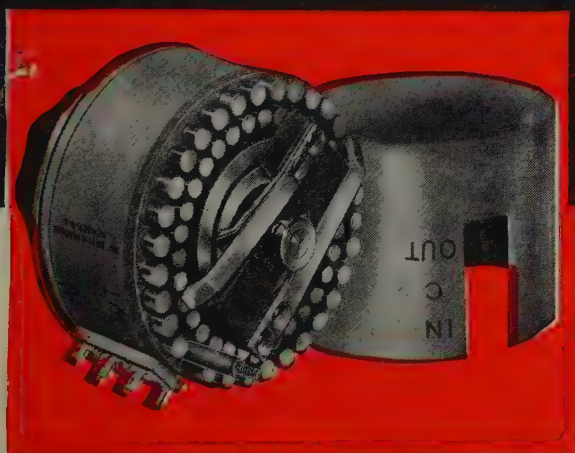
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*Ceramics
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Proceedings of the I.R.E. December, 1942



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unless they're vital... BELL TELEPHONE SYSTEM**



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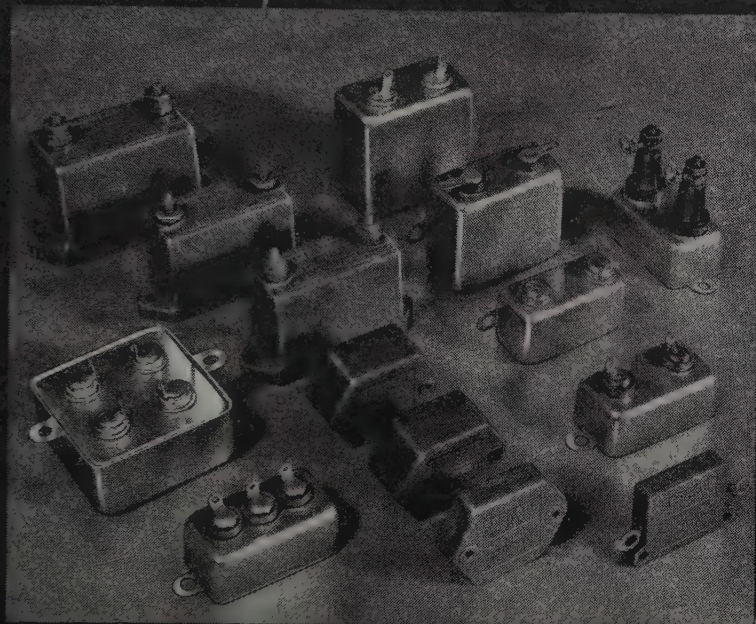
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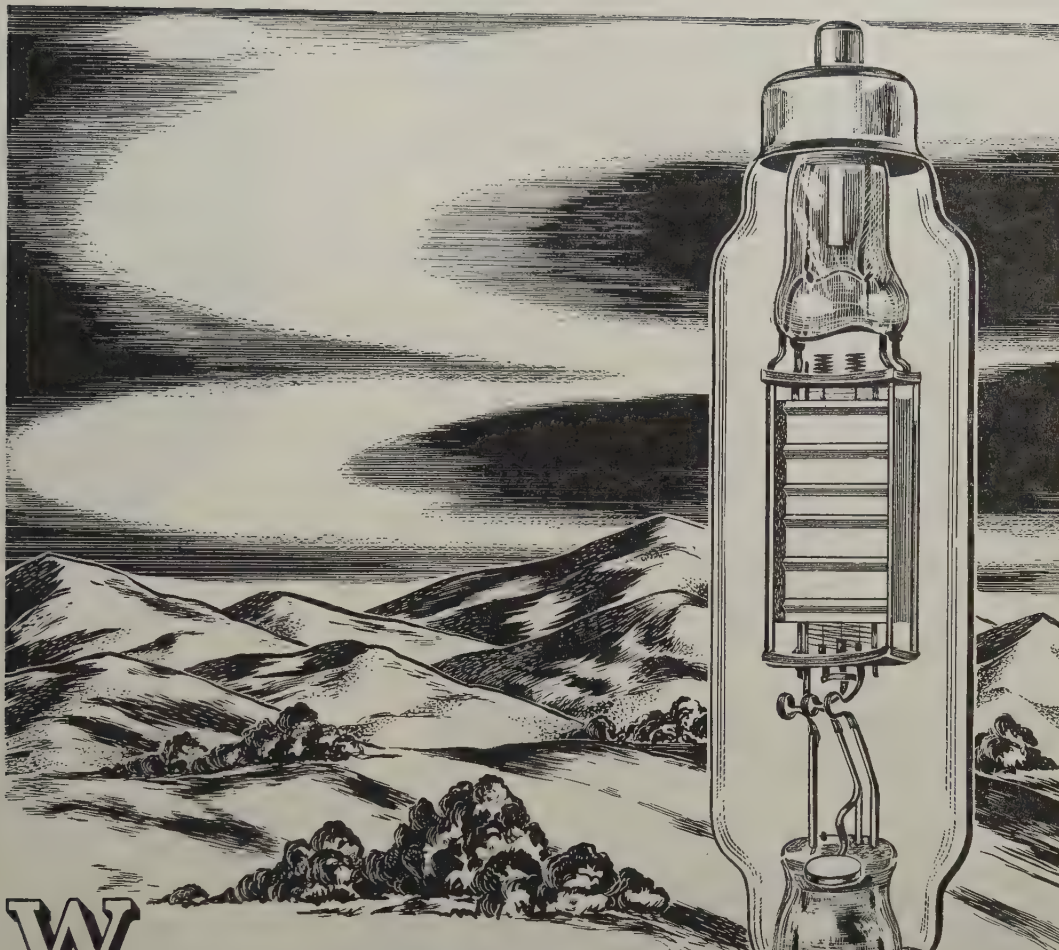
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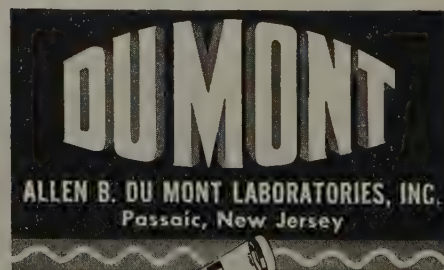
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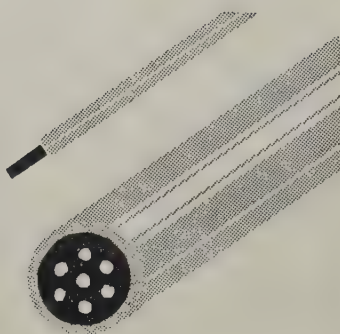
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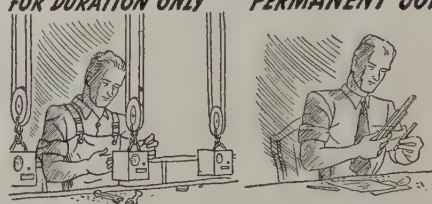
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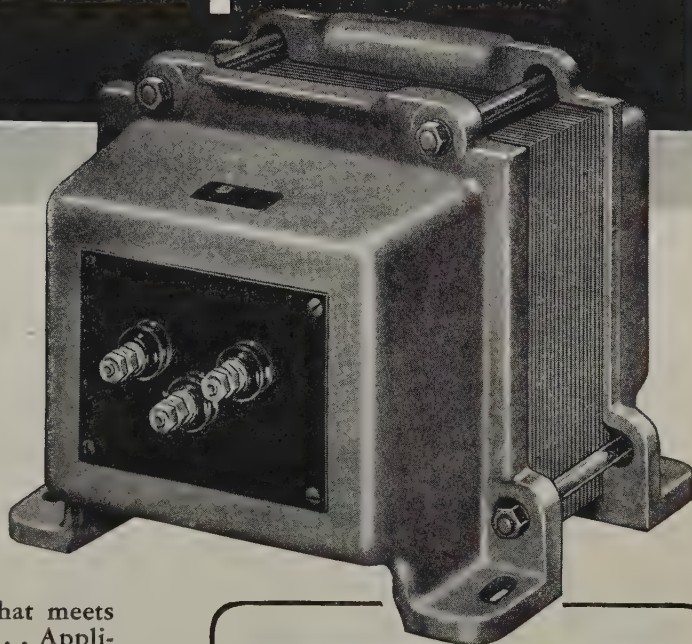
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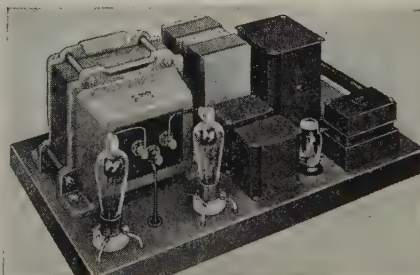
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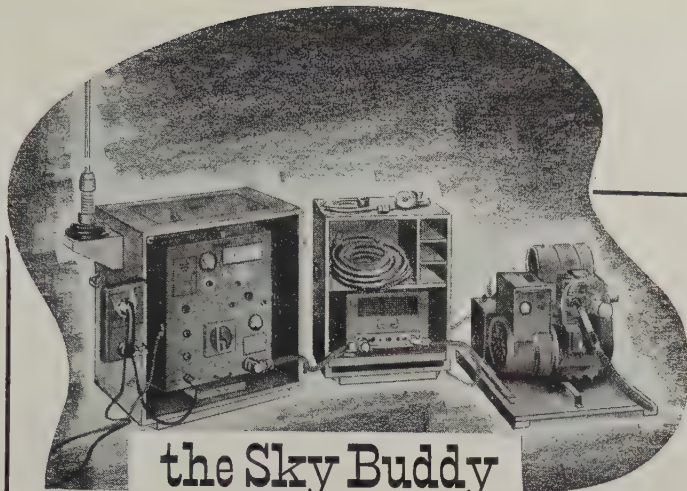
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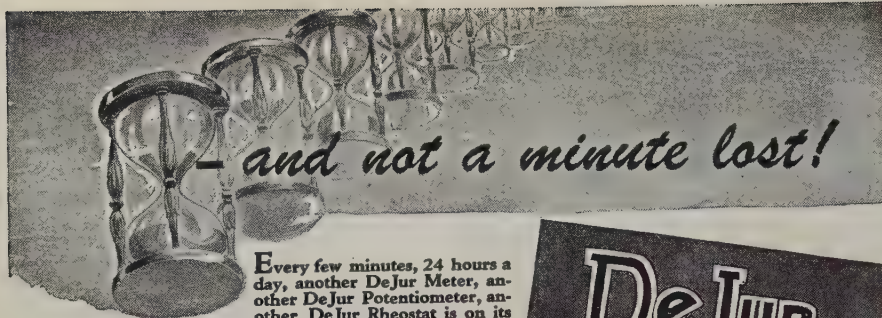


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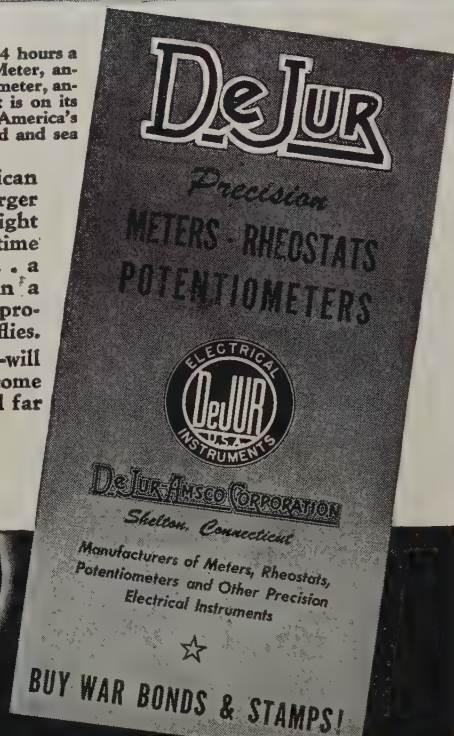
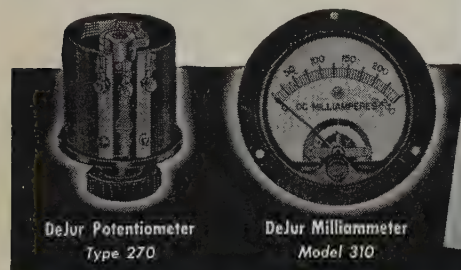
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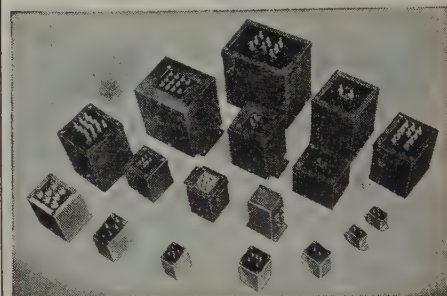
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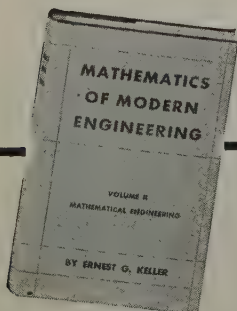


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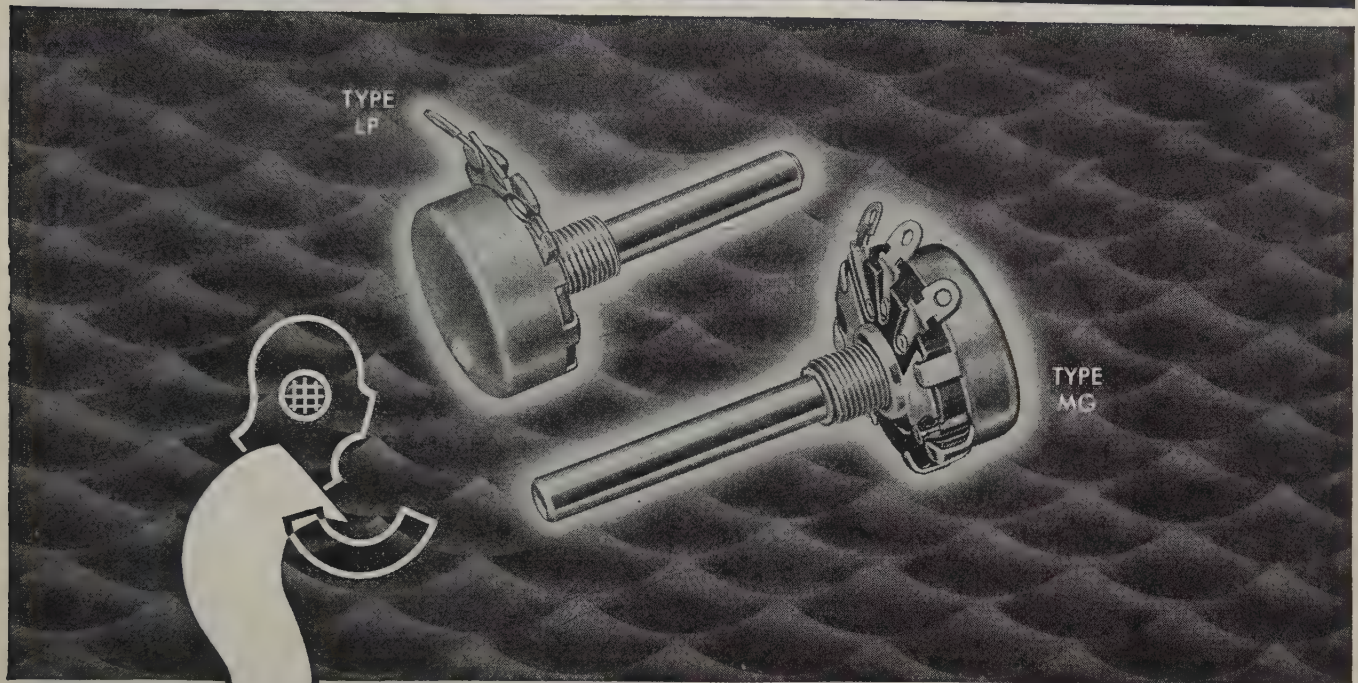
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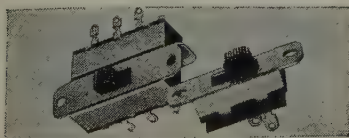
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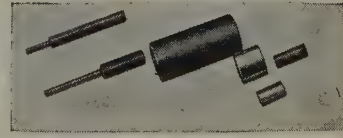
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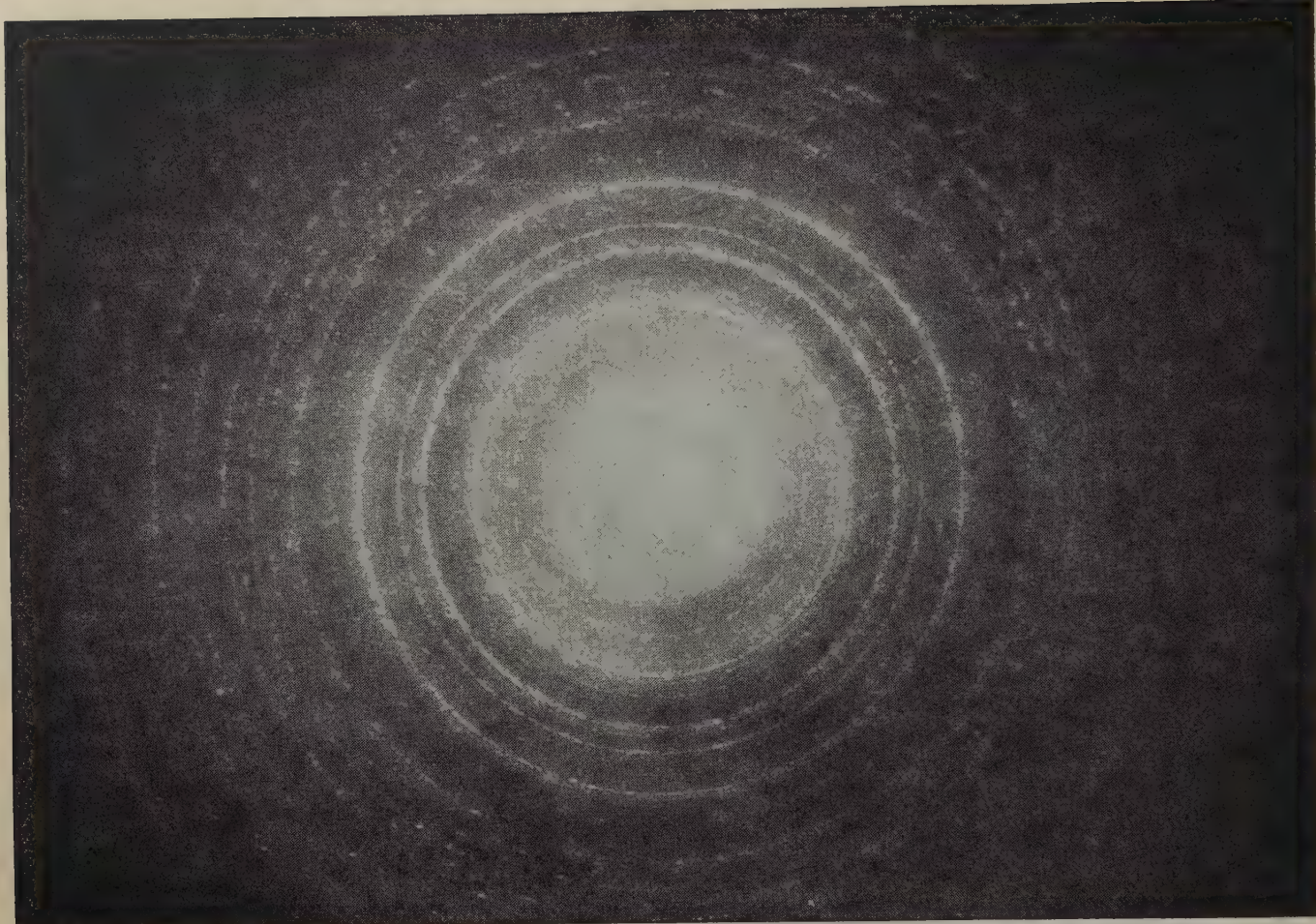
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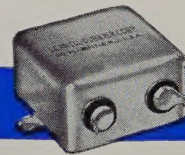
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